

HIGH ACCURACY RECEIVER FORWARD AND REFLECTED  
PATH TEST INJECTION CIRCUIT

## ABSTRACT OF THE DISCLOSURE

There is disclosed an injection circuit for measuring radio  
5 frequency (RF) signals in an RF receiver for use in measuring the  
impedance match of a receive antenna and for use in calibrating  
receiver gain, wherein an advantageous embodiment of the injection  
circuit comprises: 1) a circulator coupled to the receive antenna;  
2) a directional coupler coupled to the circulator; 3) an injection  
10 source coupled to the circulator and to the directional coupler,  
wherein the injection source is capable of injecting a test RF  
signal into either the circulator or the directional coupler; and  
4) a terminating switch for selectively enabling or disabling the  
transfer of a test RF signal from the injection source to either  
15 the circulator or the directional coupler. The circulator has a  
reverse isolation of at least 20 dB that significantly increases  
the accuracy of the measurements of the RF signals compared with  
the accuracy that may be achieved by prior art methods. The present  
invention obtains the received signal strength indicator (RSSI)  
20 measurements at any instantaneous temperature and operating channel  
and determines voltage standing wave ratio (VSWR) measurements.

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